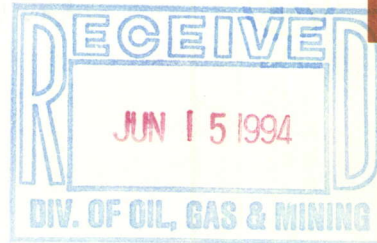


June 13th, 1994  
Mr. Wayne Hedberg  
Permit Supervisor - Minerals Regulatory Program  
Division of Oil, Gas and Mining  
3 Triad Center - Suite 350  
Salt Lake City, Utah 84180-1203



Dear Mr. Hedberg:

Enclosed are line item responses to your letter dated May 24th, 1994 concerning our draft NOI revision submission. Improvements to the runoff and sediment control plan have resulted in a number of changes to the look and construction sequencing of the Melco North dumps. No changes were made to the amount of disturbance acreage. These changes to the maps and a copy of the revised text will be forwarded when completed (June 20th).

#### **R647-4-105 Maps, Drawings & Photographs**

##### **105.2 Surface Facilities Map**

The location of the sulfide plant and sulfide repositories will be indicated on Plate II-C, Expansion Facilities Layout and Operational Surface Water Runoff. The sulfide plant is located adjacent to the existing crushing and agglomerating facilities. The North BC South pit and a portion of the Melco 7200 South Dump will be used as sulfide repositories.

##### **105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)**

You are correct in stating that the Melco pit bottom elevation of 6460 AMSL does not agree with the section shown in figure 2.1-12. Figure 2.1-12 is a typical cross section through the Melco pit and does not cut through the deepest portion of the pit which is at 6460 AMSL. The line of section for figure 2.1-12 is located on figure 2.1-13.

#### **R647-4-107 Operation Practices**

##### **107.3 Erosion Control & Sediment Control**

The drainage basin above the Melco North dumps is cross cut by 3 roads which existed prior to mine start-up; an old jeep trail to the KTVX facilities, the current access road to the KTVX facilities and a powerline access road which crosses the Oquirrh mountain range. These

roads were not constructed by or actively maintained by Barneys Canyon Mine. The current KTVX access road is not under the control of Barneys Canyon Mine and the status of the old jeep road is unknown. The powerline road has been used occasionally for exploration access. Each of these existing roads will continue to remain as permanent structures following the closure of the mine and reclamation. These roads have been labeled on Plate II-C.

Although all three roads have changed the original drainage in the area, the main road of concern is the powerline access road which is located immediately up gradient from the North Dumps. The majority of the basin watershed is intercepted by this road and any runoff water is probably being diverted by this road. The previously submitted draft plan called for upgrading this road to divert runoff water around the waste dumps. This is no longer necessary because of the following changes in the runoff and sediment control plan.

The Melco North dumps will be built in stages to control erosion and sediment, minimize disturbed acres at any one given time, limit the amount of storm runoff water from undisturbed areas, accelerate reclamation by providing areas which can be concurrently reclaimed and minimize the short term impact to Barneys Canyon. The drainage basin has been subdivided into 3 smaller drainage basins which will be referred to as the South basin, North basin and the TV basin (Plate II-C). The generalized plan for dump construction is as follows:

Stage One - South basin - Clear and grub the topsoil removal area for one year's operation, erect brush berms and earthen sediment barriers down gradient of the dump location, remove the safely accessible topsoil from the drainage area and stockpile it up and down gradient from the dump area, tip overburden into the drainage immediately up gradient from the sediment barriers to create a small impoundment for improved sediment control. The dump will be built in an up gradient (towards the west) fashion thereby acting as a permanent sediment control structure. Topsoil removal will proceed to stay ahead of dumping operations. During operations and when the dump is completed, the surface will be sloped towards the west where runoff water will temporarily impound and then infiltrate into the natural ground surface or the french drain created by the dump. The storm runoff in the South basin which is not currently being diverted away from the area by the powerline road will be allowed to temporarily impound behind the dump where it will infiltrate into the natural ground.

Stage Two - North basin - Clear and grub the topsoil removal area, erect brush berms and earthen sediment barriers down gradient of the dump location, remove the safely accessible topsoil from the drainage area and stockpile it up and down gradient from the dump area, tip overburden into the drainage immediately up gradient from the sediment barriers to create a small impoundment for improved sediment control. The dump will be built in an up gradient (towards the west) fashion thereby acting as a permanent sediment control structure. Topsoil removal will proceed to stay ahead of operations. During operations and when the dump is completed, the surface will be sloped towards the west where runoff water will temporarily impound and then infiltrate into the natural ground surface or the french drain created by the dump. The storm runoff in the North basin which is not currently being diverted away from the area by the

powerline road will be allowed to temporarily impound behind the dump where it will infiltrate into the natural ground.

Stage Three - TV basin - Clear and grub the topsoil removal area, erect brush berms and earthen sediment barriers down gradient of the dump location, remove the safely accessible topsoil from the drainage area and stockpile up and down gradient from the dump area, tip overburden into the drainage immediately up gradient from the sediment barriers to create a small impoundment for improved sediment control. Topsoil removal will proceed to stay ahead of operations. During operations and when the dump is completed, the surface will be sloped towards the north where runoff water will temporarily impound and then infiltrate into the natural ground surface or the french drain created by the dump. The storm runoff in the TV basin which is not currently being diverted away from the area by the powerline and KTVX access roads will be allowed to temporarily impound behind the dump where it will infiltrate into the natural ground.

The North Access Road will be constructed as an all fill road with waste material from the Melco and NBCS pits. The road surface will drain to the inside of the road where a large ditch has been created between the road fill and the natural ground. This ditch will serve as both a runoff control and sediment control structure. Water will temporarily impound in several sediment basins along the ditch and will infiltrate into the natural ground. Culverts will be installed in the road where required for storm water control.

The only source of runoff water from disturbed areas will be the outslope of the North Access Road and the face of the lower most dump in Barneys Canyon. Control measures will consist of earthen sediment barriers and brush berms constructed under the road slope. These constructions are temporary and will be covered over when the outslope of the North Access Road is dozed down for reclamation. Control measures in the canyon will be monitored for success and if deemed appropriate, a large sediment basin will be constructed up gradient of the where the Melco Haulroad crosses Barneys Canyon.

Historically, major storm events occurring in the canyon cause erosion and carry sediment loads down gradient until the water impounds behind the B&G railroad grade where the sediment drops out and the water infiltrates into the ground. Overall, erosion and sediment control for the whole canyon will be greatly improved by temporarily impounding storm water behind the waste dumps and allowing it to infiltrate into the natural ground. Temporarily impounding the water may also have a beneficial impact on wildlife in the area.

#### **107.4 Deleterious Material Safely Stored Or Removed**

The Barneys Canyon Mine Waste Rock Management Plan has been completed and was submitted to the Division of Water Quality and the Division of Oil, Gas and Mining on June 1st, 1994.

## **107.5 Suitable Soils Removed And Stored**

The rugged terrain and lack of suitable stockpiling locations in the dump areas create a number of operational problems and significantly increases the cost of topsoil removal, stockpiling and rehandling. Kennecott reaffirms its commitment to remove enough topsoil to meet the requirements of the reclamation plan. Only topsoil that is economically and safely accessible will be removed. Because of the large quantity of topsoil to be removed, the lack of available stockpiling locations and the staged construction of the waste dumps, considerable effort will be made to avoid double handling of topsoil by direct placement of soil on waste dumps. Proposed topsoil stockpile locations will be placed on Plate II-C.

## **R647-4-109 Impact Assessment**

### **109.1 Impacts To Surface & Groundwater Systems**

A copy of the Barneys Canyon Mine Waste Rock Management Plan was submitted to DAQ and DOGM on June 1st, 1994.

The long term effect of the Melco North dumps will be to promote the collection and infiltration of storm water into the natural ground surface at a higher elevation in Barneys Canyon. Historically, this creek only flows during significant storm events during which it causes erosion and down gradient migration of sediments. The runoff water becomes impounded behind the B&G railroad grade where it infiltrates into the ground leaving the sediment load behind. The configuration of the waste dumps will provide erosion and sediment controls which nature has not provided. These controls will allow the runoff water to infiltrate into the ground further up gradient prior to causing erosion and becoming laden with sediment. The overall impact to the surface and ground water systems is positive.

Additional piezometers installed in the Melco pit area during the later part of 1993 continue to indicate that the ground water table north and south of the pit is around 6400 feet AMSL. A transducer installed approximately under the proposed final pit bottom indicates a ground water table around 6070 feet AMSL. The Melco pit is not expected to impact the ground water system for the following reasons:

1) although the area of the pit is large, the majority of the highwall runoff will be collected and diverted out of the pit to the north and south. This is possible because the pit daylights to the north around the 6900 elevation and to the south around the 7000 elevation. The remaining surface area below these elevations is approximately 30 acres and will only receive moisture from meteoric events.

2) eight acres of the lower pit area, consisting of the haulroad and pit bottom, will be



ripped, covered with 12 inches of topsoil and reseeded as part of the reclamation plan. Results from HELP modelling indicate very little water will infiltrate past the rooting zone into the underlying water table with the proposed reclamation plan.

3) the deepest part of the proposed pit is 6460 feet AMSL and the water table in that area has now been established to be around 6070 feet AMSL. The small quantity of water available for infiltration (22 surface acres subject to evaporation) is insignificant in comparison to the time required to travel the 400 feet to the water table and the dilution from the thousands of acres of up gradient watershed.

4) the Barneys Canyon Mine Waste Rock Management Plan addresses mitigation measures should the quality of the runoff water become an issue.

### **R647-4-110 Reclamation Plan**

#### **110.3 Description Of Facilities To Be Left (post mining use)**

The existing NOI (page 78 - November 19, 1993) states "**All non earthen facilities will either be transported from the site for use elsewhere, salvaged, or demolished. Any paved surfaces will be removed and handled as demolition debris as described below. The various facilities will be removed or disposed of as follows:**

**crushers, conveyors, and mobile equipment will be salvaged or transported from the site for use elsewhere;**

**buildings will be salvaged or demolished and removed from the site;**

**powerlines and substations will be removed and salvaged upon completion of the operations, unless they are preserved for a continued, non-mining use;**

**fuel and explosives storage facilities will be salvaged or transported off-site for disposal; and**

**fences will be removed and salvaged or junked following completion of reclamation."**

The sulfide plant and associated facilities will not have any post-mining use and will be removed as stated above.

Regarding the bonding for the disposition of the fixed mining facilities/structures, the original reclamation cost estimates were based on the premise that the salvage value of the fixed structures would offset their reclamation costs. Recent salvage work within the corporation confirms this premise and indicates there is likely to be a net gain. The demolition of the larger

buildings has been estimated at \$10,000 each with the contractor recovering the demolished materials for resale.

Building demolition will probably consist of piece-meal dismantling and disassembly and destruction/reduction via heavy equipment. Asphalt and concrete will be broken up and removed from the site. The exact details of the operation will up to the discretion of the group performing the work (contractors or site personnel).

A list of permanent structures which will be removed/decommissioned at the time of mine closure and reclamation are:

Truck Shop/Warehouse	- remove building, remove concrete, reclaim land
Process Building & concrete pad	- remove buildings, remove concrete, reclaim land
Administration & Security Buildings	- remove buildings, remove concrete, reclaim land
Substation, Power Lines, Poles, etc.	- remove wire, poles, transformers, etc., reclaim land
Crusher & Conveyors	- remove equipment, remove concrete, reclaim land
Sulfide Flotation Plant	- remove building, remove concrete, reclaim land
Vehicle Wash Pad	- remove concrete, reclaim land
Melco Water Line	- remove buried steel waterline & water stands
Fences, Guard Rails, etc.	- remove hardware
Water Storage Tanks,	- remove tanks
Fuel Tanks	- remove tanks and leak containment systems
Leach Pads	- see section 5.3.3 of the NOI for reclamation details
Solution Ponds	- see section 5.3.3 of the NOI for reclamation details
Solution Piping	- see section 5.3.3 of the NOI for reclamation details
Asphalt Road & Parking Lot	- remove asphalt, dispose of in permitted solid waste landfill

### **110.5 Revegetation Planting Program**

Yellow sweetclover will be added to the temporary stabilization mix at a rate of 1 pound per acre. Table 5.6-1 (Seed Mix for Topsoiled Areas) will be modified to include small burnett (*Sanguisorba minor*) and forage kochia (*Kochia prostrata*) at a rate of 1 pound PLS (each) per acre. Mountain big sagebrush (*Artemisia tridentata vaseyana*) will be used as a substitute for these in the upper pit and dump areas and will be applied at the rate of 1 pound per acre.

### **R647-4-111 Reclamation Practices**

#### **111.11 Structures And Equipment Buried Or Removed**

Please refer to subsection 110.3 located in the preceding text.



### **R647-4-113 Surety**

The area where the sulfide plant is being erected is approximately 4 acres in size. The area was previously disturbed and reclamation costs were included in the previous NOIs. The new reclamation cost estimate is being applied to **all** disturbed areas that Barneys is required to reclaim (page 39 of the pending submission), not just the newly disturbed areas.

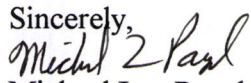
Please refer to subsection 110.3 located in the preceding text for the sulfide plant reclamation cost estimate.

The reclamation cost estimate will be adjusted using the Division's current annual escalation factor of 2.10% for 5 years. This results in a multiplier of 1.110 for all 5 years or a reclamation cost of \$4,231 per acre in 1999 dollars ( $\$3,812 * 1.110$ ). The existing reclamation bond will be increased to 4.5 million dollars ( $1,061.9 \text{ acres} * \$4,231 \text{ per acre} = \$4,492,899$ ).

### **R647-4-116 Public Notice & Appeals**

We understand that the application was categorized as a permit revision and requires a 30-day public comment.

Unfortunately, our time table of having an approved NOI by July 1st, 1994 is no longer possible. However, we would like to receive tentative approval as soon as possible so that we may begin road access construction, tree clearing, vegetation grubbing and topsoil removal.

Sincerely,  
  
Michael Lee Pagel  
Chief Engineer  
Barneys Canyon Mine